Conclusion: This large study confirms a high prevalence of ERP in a middle-aged population, particularly in men. Long-term total mortality in women with ERP was particularly increased.

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Prevalence, electrocardiographic characteristics and variations of early repolarization syndrome on a population of healthy subjects

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Background: Infero-lateral repolarization has been considered benign for a long time, however recent studies have demonstrated a possible association with sudden death.

The **aim of this study** is to estimate the prevalence of early repolarization, demonstrate the associated electrocardiographic abnormalities and fluctuations of this syndrome in a population of healthy subjects.

Patients and methods: Electrocardiograms of 1983 patients undergoing routine medical examination at the Centre Principal d'Expertise Médicale des Personnels Navigants of HIA Percy (Clamart, 92, France) from early January to late March 2000 were described. Early repolarization was defined as an elevation of J wave of at least 0.1 mV in the inferior and lateral leads. In patients with early repolarization, retrospective analysis of electrocardiograms from the following ten years (2000-2010) was carried out. Clinical and electrocardiographical characteristics were statistically analyzed.

Results: The prevalence of early repolarization was estimated at 5.7% (CI 95%, 4.7-6.7%). 3 patients presented with ECG severity criteria (inferolateral early repolarization, J wave>0.2 mV and notching). For 20% of patients early repolarization was intermittent and 56.5% had substantial variations in J wave amplitude, morphology or territory. Early repolarization was commonly associated with ST-segment elevation, prominent T waves, slower cardiac heart rate and shorter corrected QT duration. No malignant ventricular arrythmia nor sudden death occured among the 3 patients during the 10 years follow-up.

Conclusions: Our data are consistent with previous studies concerning early repolarization syndrome. Given the high prevalence and important fluctuations of early repolarization, every patient who presents with this syndrome cannot be considered to be at risk of sudden death. Further research is needed to identify the electrocardiographic forms of this syndrom which are associated with an increased risk of mortality.

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Seizure disorders and electrocardiogram abnormalities

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Transient loss of consciousness is one of the most frequent reasons of hospitalization. Besides epileptic syndromes and ventricular arrhythmias documented by ECG, many assessments of loss of consciousness remain answered.

This study aims to detect electrical heart disease in patients diagnosed and follow up in the neurology department as epileptic seizure disorder without organic abnormality.

Methods: The electrocardiograms of patients hospitalized in 2008-2009 for the first or repetitive seizure episode(s) with or without established diagnosis of cryptogenic epilepsy were retrospectively analyzed. Patients presenting with seizure disorder in 2009-2010 were prospectively studied.

Results: 63 patients (38 male, 29 yo) met the diagnosis of cryptogenic epilepsy. Four (6%) had ECG abnormalities. On retrospective analysis, we found two ECGs of BRUGADA syndrome type 2 (3%) one of which was confirmed on Ajmaline test (1,5%). Prospectively, one patient had QT pathology and another was diagnosed to have coronary spasm induced ST elevation interval.

Conclusion: In a population of cryptogenic epilepsy, 3/63 (4,7%) had electrical heart disease that may be responsible for seizure(convulsive syncope). Close collaboration between emergency physicians, neurologists and cardiologists is crucial to improve diagnosis of seizure disorders in patients with normal heart and brain.

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Circadian variations of ST segment elevation in Brugada syndrome: comparison between symptomatic and asymptomatic patients

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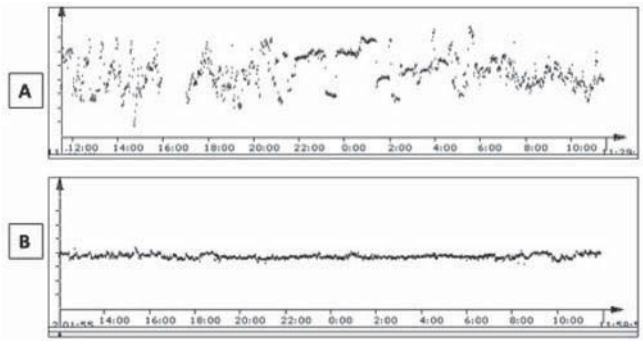
Introduction: Brugada syndrome (BS) associates a typical ST segment elevation (STE) in the right precordial leads and an increased risk of sudden cardiac death. Questions remain on the rhythmic risk stratification, especially in asymptomatic patients (pts). Modulations of STE and of rhythmic events by the autonomic nervous system were previously reported. The aim of this study was to assess and compare the circadian variations of STE in symptomatic (group S) and asymptomatic pts (group A) with BS.

Methods: Twenty two pts with a BS (mean age=44.3±13.7, men=19) were included (S: n=10; A: n=12). In each pt, a 12 leads ECG was acquired using 24 hours Holter recording. Using a dedicated algorithm, an average QRS-T complex was obtained every minute for each lead (V1-V3). STE was measured in 6 points located 100, 110, 120, 130 and 140 ms after QRS onset (Qo). The coefficient of circadian fluctuations of STE (STE-CFC) was defined by the difference STEmax-STEmin.

Results: The STE-CFC was higher in group S. For example 120 ms after Qo the STE-CFC in V1 was 274±143 µV in group S vs 152±42 µV in group A ($p<0.01$) and 130 ms after Qo in V2 it was 365±178 µV in group S vs 218±108 µV in group A ($p<0.01$). Typical examples are presented in the figure: STE in lead V2 for each average QRS-T complex during 24 hours measured 120ms after Qo in 1 symptomatic pt (A) and 1 asymptomatic pt (B).

Conclusion: Symptomatic pts with BS have a higher level of STE circadian variations. The rhythmic risk could be favoured by these fluctuations of BS phenotypic expression. The mechanisms inducing these fluctuations (autonomic cardiac innervation, receptor sensitivity) are not yet identified.



STE in lead V2